Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A compensating apparatus for compensating for intermodulation products, the apparatus comprising:

a phase splitting unit ~~(1004)~~, which splits an input RF signal ~~(1002)~~ into an in-phase component ~~(1006)~~ and a quadrature component ~~(1008)~~;

first multiplying units ~~(1010, 1010')~~, which square the value of the in-phase component and the quadrature component respectively;

a first summer ~~(1030)~~ which sums the squared values to generate an X^2 signal;

combining units ~~(1040, 1050, 1060, 1040', 1050', 1060')~~, which respectively combine the X^2 signal, the in-phase component, the quadrature component, and an external signal ~~(1025)~~ with respective predistorting coefficients ~~(1102, 1112, 1106; 1116; 1104, 1114)~~; and

an adder ~~(1090)~~, which generates a ~~predistored~~ predistorted RF signal ~~(1092)~~ from the output of the combining units.

Claim 2. (Currently Amended) A compensating apparatus according to claim 1, wherein the combining units comprise ~~fist~~ first to sixth combining units.

the first combination unit ~~(1040)~~ combining the X^2 signal with a first predistorting coefficient ~~(1102)~~;

the second combining unit ~~(1040')~~ combining the X^2 signal with a second predistorting coefficient ~~(1112)~~;

the third combining unit ~~(1050)~~ combining the external signal with a third predistorting coefficient ~~(1104)~~;

the fourth combining unit ~~(1050')~~ combining the external signal with a fourth predistorting coefficient ~~(1114)~~;

the fifth combining unit ~~(1060)~~ combining the in-phase component with a fifth predistorting coefficient ~~(1106)~~;

the sixth combining unit ~~(1060')~~ combining the in-phase component with a sixth predistorting coefficient ~~(1116)~~.

Claim 3. (Currently Amended) A compensating apparatus according to claim 2, further comprising a second summer ~~(1070)~~ summing the outputs of first and third combining units; and a third summer ~~(1070')~~ summing the outputs of second and fourth combining units.

Claim 4. (Currently Amended) A compensating apparatus according to claim 3, further comprising a second multiplying unit ~~(1080)~~ which multiplies the output of the second summer with the in-phase component; and a third multiplying unit ~~(1080')~~ which multiplies the output of the third summer with the quadrature component, and wherein the adder sums the outputs of the ~~firth~~ fifth combining unit, the sixth combining unit, the second multiplying unit and the third multiplying unit to produce a predistorted RF signal.

Claim 5. (Currently Amended) A compensating apparatus as claimed in ~~any preceding Claim,~~ claim 1, wherein the apparatus is an application specific integrated circuit.

Claim 6. (Currently Amended) A compensating apparatus as claimed in ~~any preceding Claim,~~ claim 1, wherein an output carrying the X^2 signal is coupled to a delay unit ~~(1502, T1)~~ and the output of the delay unit is fed back into the apparatus as the external signal ~~(1025)~~, whereby the external signal is a delayed signal derived from the X^2 signal.

Claim 7. (Currently Amended) A compensating apparatus as claimed in ~~any of Claims 1-5,~~ claim 1, the apparatus comprising a further multiplier ~~(1020)~~, which squares the X^2 signal again to give a X^4 signal, wherein the external signal ~~(1025)~~ is the X^4 signal.

Claim 8. (Currently Amended) A hybrid compensating apparatus for substantially simultaneously compensating for both carrier frequency and envelope frequency dependent effects due to IM3 products, the hybrid apparatus comprising:

[[-]] a first compensating apparatus ~~as claimed in Claim 6,~~ comprising an ASIC, arranged to receive an RF input signal and compensate for envelope frequency effects;

[[-]] a second compensating apparatus ~~as claimed in any of claims 1-5,~~ arranged to receive the RF input signal and compensate for carrier frequency effects;

[[-]] a carrier delay unit, which imposes a predetermined delay upon the RF input signal supplied to the second compensating apparatus; and

[[-]] ~~a further~~ an adder which sums the outputs of the first and second compensating apparatuses.

Claim 9. (Currently Amended) A feed forward amplifier arrangement comprising:

[[-]] a compensating apparatus ~~(APE)~~ as claimed in ~~any of the preceding claims;~~ claim 1;

[[-]] an amplifier ~~(PA)~~ having non-linear transfer characteristics that distort signals amplified thereby, the amplifier being coupled to the output of the compensating apparatus;

[[-]] a controller ~~(PIC)~~ which generates coefficients for feeding into the compensating apparatus; and

[[-]] a sampling means which samples an output signal from the amplifier and which feeds the sample back to the controller.

Claim 10. (Currently Amended) A method of compensating for intermodulation products, the method comprising:

splitting ~~(1004)~~ an input RF signal ~~(1002)~~ into an in-phase component ~~(1006)~~ and a quadrature component ~~(1008)~~;

squaring ~~(1010, 1010')~~ the in-phase component and quadrature component respectively and summing ~~(1030)~~ their squares to generate an X^2 signal;

combining ~~(1040, 1050, 1070, 1080, 1040', 1050', 1070', 1080')~~ the X^2 signal, the in-phase and quadrature components, and an external signal ~~(1025)~~ with respective predistorting coefficients ~~(1102, 1104, 1112, 1114)~~; and

generating ~~(1090)~~ a predistorted RF signal ~~(1092)~~.

Claim 11. (Currently Amended) A method according to Claim 10, wherein the combining step comprises ~~fist~~ first to sixth combining operations,

the first combining operation ~~(1040)~~ combining the X^2 signal with a first predistorting coefficient ~~(1102)~~;

the second combining operation ~~(1040')~~ combining the X^2 signal with a second predistorting coefficient ~~(1112)~~;

the third combining operation ~~(1050)~~ combining the external signal with a third predistorting coefficient ~~(1104)~~;

the fourth combining operation ~~(1050')~~ combining the external signal with a fourth predistorting coefficient ~~(1114)~~;

the fifth combining operation ~~(1060)~~ combining the in-phase component with a fifth predistorting coefficient ~~(1106)~~;

the sixth combining operation ~~(1060')~~ combining the in-phase component with a sixth predistorting coefficient ~~(1116)~~.

Claim 12. (Currently Amended) A method according to claim 11, further comprising a second summing operation ~~(1070)~~ of summing the results of first and third combining operations; and a third summing operation ~~(1070')~~ of summing the results of second and fourth combining operations.

Claim 13. (Currently Amended) A compensating apparatus according to claim 12, further comprising a second multiplying operation ~~(1080)~~ which multiplies the output of the second summing operation with the in-phase component; and a third multiplying operation ~~(1080')~~ which multiplies the output of the third summing operation with the quadrature component, and wherein the step of generating a predistorted RF signal comprises summing the results of the ~~firth~~ fifth combining operation, the sixth combining operation, the second multiplying operation and the third multiplying operation.

Claim 14. (Currently Amended) A method as claimed in ~~any of claims 10-12,~~ claim 10, wherein the external signal is a delayed ~~(1502)~~ signal derived from the X^2 signal.

Claim 15. (Currently Amended) A method as claimed in ~~any of claims 10-13,~~ claim 10, wherein the method further comprises squaring ~~(1020)~~ the X^2 signal to generate a X^4 signal and wherein the external signal ~~(1025)~~ is the X^4 signal.

Claim 16. (Cancelled)